DOCUMENT RESUME

ED 230 006

EC 152 573

AUTHOR Holm, Caren; And Others
TITLE Interdependent Support Service Model.
PUB DATE Apr 83
NOTE 50p.; Paper presented at the Annual International Convention of The Council for Exceptional Children (61st, Detroit, MI, April 4-8, 1983).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Communication Skills; Elementary Secondary Education; *Inservice Teacher Education; *Motor Development; Program Effectiveness; Self Care Skills; *Severe Disabilities; Staff Development; *Student Evaluation

ABSTRACT

The Interdependent Support Service Model, a 3 year project operated by the Hennepin Technical Center (Minneapolis, Minnesota) was designed to evaluate and program for communication and motor needs of severely/profoundly handicapped students and to develop related inservice training for staff. First year activities included modifying existing assessment procedures and developing a total assessment package which was then used in the second year. In the final year of the project, training instructional staff to use project procedures was emphasized. Evaluation of inservices on communication, feeding, and sensorimotor development and attended by approximately 200 staff revealed overall satisfaction and pre-posttest information indicated significant gains in knowledge for teachers and aides. Evaluation of the impact on students produced equivocal results, although staff did demonstrate increased proficiency in writing measurable objectives as a result of project activities. Inservice Objectives and rating scales, knowledge tests for inservice, and assessment instruments are appended. (CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED230006

INTERDEPENDENT SUPPORT SERVICE MODEL

Caren Holm, Communication Disorders Specialist
Sandra Scott Livingston, Registered Occupational Therapist
Lois Nordling, Communication Disorders Specialist/ Project Director
Dr. Stanley Knox, Project Evaluator

Hennepin Technical Centers
Special Education Division
1820 N. Xenium Lane
Minneapolis, MN 55441

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Lois H. Nordling
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CEC
Detroit, MI
April 5, 1983.

EC154573

As a result of recent federal and state legislation, educational services in the public schools have now been extended to the most severely/profoundly handicapped students. The inexperience of the public schools in dealing with these students has resulted in a number of problems including the development of appropriate assessment procedures and curricular content. Other projects have addressed these problems in many of the curricular areas. However, the high incidence of motor problems and speech/language problems has not been adequately addressed in any system. Yet it is skills in these areas which may determine, to a large extent, how well students will be able to function in other curricular areas.

The Special Education Division of Hennepin Technical Centers (Joint Independent School District 287) provides educational services to low-incidence handicapped students living in the western suburbs of Hennepin County, Minnesota. Its program for retarded students served over 600 moderately to profoundly mentally retarded students in 1981-82. Approximately 75% of these students had communication and/or motor goals on their Individual Educational Plans.

The Interdependent Support Service Model (ISSM) was a three year project funded in part by ESEA Title IV, Part C, P.L. 95-561. The objectives of this project were as follows:

1. Develop a practical and reliable system for evaluating the unique motor and communication needs of severely/profoundly handicapped students.

2. Identify and implement motor and communication service delivery models which appropriately meet the individual needs of students.

3. Develop an inservice training plan for instructional staff that will aid in interpreting the assessment data and provide strategies and activities when using this information to meet the students' motor and communication needs.

The target population for this project were those students who are presently classified as trainable mentally retarded. However, the present population of students in such programs display a wide range of characteristics which are not typical of students who have been so classified in the past. The present population consists of those students who are functionally within the ranges of moderately, severely and profoundly handicapped as defined under more current systems of classification. They represent students who range from those whose primary educational needs fall within the academic and vocational areas to the profoundly handicapped student whose primary educational needs are developing gross motor control and self-help skills. These latter individuals are those who are so severely handicapped that they were previously found only in institutional settings. Between these wide extremes are students who have a variety of needs in academic, social, vocational and self-help areas.

Among the most common educational problems in this group of students are those relating to motor skills and speech/language skills. They are the most frequently occurring secondary handicap in this population and often have a profound impact on the ability of the schools to address the needs created by the primary handicap. In some instances, it may be argued that the motor and language problems of the child have had such a significant effect upon the development that these factors may have been influential in the development of the functional handicap. The literature is replete with evidence of the need to ameliorate these interfering conditions to the greatest extent possible in order to maximize that ability of the child to profit from the educational program.

A primary difficulty in meeting the needs of the children in this population has been the lack of suitable procedures for identifying the nature of the problem in such a manner as to be able to attack it with specific procedures. Most of the procedures presently available are applicable only to populations with a higher skills level than is found in this population or they are so general that it is not possible to use them in the development of an educational program for a given student. Without adequate means of identifying the specific nature of the problem, it has not been possible to structure effective educational programs. As a result, many students progress through the educational program without adequate attention to these critical areas of development.

During the first year of this project, the project staff and its advisory committee reviewed existing assessment procedures, tested and critiqued their usefulness in providing the critical information, modified those which appeared to have potential, and incorporated the results into a total assessment package.

The activities during the second project year focused on the implementation of the assessment procedures. Inservice training programs were developed for the communication disorders specialists, motor specialists, and classroom staff. User's manuals were developed for each of the assessment instruments. The inservice training activities were then implemented.

During the final year of the project, the major emphases were on training of the instructional staff (teachers and aides) in implementing procedures developed during the project, and improving the assessment tools and User's Manuals.

EVALUATION OF STAFF INSERVICES

Approximately 200 staff participated in the inservice training related to communication, feeding, and sensorimotor development. Two methods were used to ascertain the effect of the inservice programs.

First, all participants were asked to complete a rating scale on the effectiveness of the training in attaining the objectives which were specified. A copy of these rating scales is included in Appendix A.

Second, the project staff developed objective instruments designed to determine whether the participants increased their knowledge as specified in the objectives of the inservice. These instruments were administered prior to the initiation of the inservice activities and then administered at the conclusion. These instruments are included in Appendix B.

Table 1 contains the responses of teachers (including other professional staff) and aides to the communication inservice. All mean responses except one were in the range between successful and very successful. The single rating which failed to attain that level (and only slightly) was related to the success in identifying situations conducive to spontaneous communication. In most cases, the ratings of teachers and aides were very similar.

The ratings for the sensorimotor inservice are provided in Table 2. The mean teacher ratings were generally around the successful rating. The only one which varied from the general pattern was the rating for understanding and applying principles of treatment, which was slightly lower. The mean ratings by the aides followed the same pattern with no deviations, although they generally seem to be somewhat higher than the mean ratings of the teachers.

In Table 3 one finds the outcomes of the feeding inservice. The mean ratings for both teachers and aides are, with one exception, within the successful to very successful range. Teachers rated their ability to demonstrate the use of facilitation techniques somewhat lower.

Pretests administered prior to the inservice and the posttests for the communication inservice are given in Table 4, along with the results of the statistical analysis. As is apparent, highly significant gains were made by both teachers and aides. There was a difference of 2.05 points in the mean scores of teachers and aides on the pretest. An analysis of variance indicated a significant difference between the two groups (F=19.36, p .0001) on the pretest. At the time of the final testing, the difference had been reduced to .67, which was no longer significant (F=2.54, p .11).

As with the communication testing, both the teachers and aides made significant gains as a result of the sensorimotor inservice (see Table 5). The analysis of variance revealed that the mean difference in the scores of teachers and aides on the pretest were not significant (0=.29, F=1.69, p .68), nor were they significant on the posttest (p=.56, F=.477, p .49).

Table 6 contains the result of the knowledge test in feeding. As in both of the other cases, both teachers and aides made significant gains based upon the differences in the mean scores. The difference of 6.21 between the pretest mean of the teacher and the aides was significant (F=14.90, p .002). That significance was also apparent at the time of the posttest (P=6.16, F=8.95, p .003).

In summary, in all cases both teachers and aides increased their knowledge significantly, and in the case of the communication inservice, the aides increased sufficiently to erase significant differences which existed prior to the inservice.

EVALUATION OF IMPACT ON STUDENTS

Two major activities were designed to obtain an indication of the impact of the project activities upon the students. The first method utilized the expert jury and second was based upon the assessment instruments developed in this project.

Analysis of objectives. Expert jurists were asked to judge the functional level and the specificity of the objectives which were found in the IEPs of individual students. When the objectives written during the first year of the project were compared with those on IEPs at the end of the project, it was expected that a greater proportion of the students who were with teachers and specialists who had training would show gains in each of the dimensions of the project.

Assessment instruments. During the 1981-82 school year, there were three groups of students included in the project. Group I was the experimental group of the preceding year. These were the students who had been placed with specialists and teachers who had training from the project staff during the first year of the project. Group II consisted of preschool students being served by specialists and teachers who were the first group to receive training at the beginning of the third year. Early in the year, the students began obtaining services from teachers and specialists who had completed the training program. Group III were those students whose teachers and the specialists serving them did not complete the training until later in the year. In effect, each of the groups of students received the benefits of the project over varying periods of time. Assuming a relationship between the amount of time in an educational program and the achievement of the students, it was hypothesized that those students who began receiving the services the first year would show greater gains than those who began early the last year, and that both of these groups should show greater gains than those who did not start receiving services until later in the year.

In order to test this hypothesis, samples of students were drawn randomly from each of the three groups. All students were assessed with the instruments developed as a result of the project at the time that the teachers and specialists commenced the training. (Students in the experimental group and control group from last year already had the pretesting completed.) At the end of the academic year, these students were again assessed to determine the amount of gain.

When the variables represented continuous data, the gains were compared using an analysis of covariance with the pretest score as the covariable. When the data failed to meet the necessary assumptions for the use of the analysis of covariance, other procedures were used.

Communication

The following scores taken from the communication sample were used to measure the impact of the intervention on student performance.

1. Mean Length of Utterance (Words)
2. Brown's Stages
3. Total Utterances
4. Total Words

Pretest data were obtained on the experimental and contrast groups during the first year of the project and on the preschool group at the beginning of the third year. Posttest data for all groups from assessments at the end of the third year of the project.

Table 7 provides the pretest and posttest means and differences for all variables for all groups. In all cases, the largest gains were made by the preschool group with significant differences between the pretest and posttest scores on three out of four variables. The only other significant gain was in mean length of utterance (words) in the contrast group.

In order to determine the effect of the project activities on the performance of the students on the communication sample, an analysis of covariance was used to analyze the data. In this procedure the pretest scores were used as the covariable to control for possible differences between the groups on pretest scores.

Tables 8, 9, 10 and 11 contain the results of this analysis. In no case were the differential effects large enough to attain significance when the pretest conditions were controlled. While significant gains were posted when the groups were considered in isolation, this analysis does not support a conclusion that they were due to differential treatment.

Data on the frequency of occurrence of one-, two-, three-, and four-word utterances were reported as a percentage of the total utterance. Since the length of utterance varied with each language sample, the results were analyzed on the basis of the number of students demonstrating an increase or decrease in the percentage obtained for the language sample administered as a pretest and that administered as a posttest. Tables 12, 13 and 14 provide a summary of the results for each group.

Within the contrast group the changes were minimal, as indicated by the results of the chi-square analysis. Within the preschool sample, the results were significant and dramatic. There were decreases in all subjects in the one-word responses and shifts to more subjects showing increases in two-, three-, and four-word responses. Differences were not significant in the experimental group.

In summary, the results of the t-tests on pretest and posttest and the analysis of the data on fluency suggest that the subjects in the preschool group gained the most from project activities. However, when pretest conditions are controlled and the effects measured across the

groups, there is no significant difference in their performance.

Sensorimotor. Early in the project an experimental group of students and a contrast group were assessed using the Quantitative Profile on Movement Analysis. This instrument provides ratings for subjects in 15 areas of sensorimotor development. At the end of the final project year, a posttest was administered to these same students. The results of the analysis of these assessments are found in Table 15.

On seven of the fifteen variables measured, the experimental group demonstrated significant gains. The variables on which those gains were demonstrated were: body righting and trunk flexibility, tactile processing, bilateral integration, motor planning, neurological status, symmetrical tonic neck reflex, and stability-mobility. There were also significant gains made by the contrast group in bilateral integration and neurological status. However, in both cases, significant, and much more impressive gains, were made by students in the contrast group.

As with the data on the communication sample, the results obtained from the Quantitative Profile on Movement Analysis were analyzed to determine any differential effects of the contrast and experimental group by use of analysis of covariance with pretest scores as the covariable. There were no significant results on any of the variables except Head Righting.

On this single dimension, the experimental group demonstrated significantly larger gains than the contrast group when the pretest conditions were controlled.

In another attempt to measure changes in the sensorimotor area, performances on the Bridgeview Reflex Test were compared at the time project activities commenced and at the close of the project. This test (a copy of which is in Appendix C) measures the child's performance in 14 areas of sensorimotor development. Each item consists of several developmental stages within each area, and students are rated on each item. Final ratings were compared with initial ratings, and a comparison was made as to whether the final rating represented an increase in skill level, a decrease, or no change. The distribution of these changes for each group is analyzed in Table 16.

TABLE 16

Analysis of Changes in Ratings on
Bridgeview Reflex Test

	Increases	No Change	Decreases
Contrast	38 (26.95%)	64 (45.39%)	39 (27.66%)
Experimental	33 (24.26%)	75 (55.15%)	28 (20.59%)

(x^2=2.9393, d.f.=2, $p < .20$)

Although a larger percentage of the contrast sample received ratings which indicated a deterioration in performance, the differences were not significant. Those differences that did exist appeared to be more related to maintenance or loss of skills, rather than gains.

Feeding. The same procedures were used in the area of feeding. The Eating Assessment Tool (Appendix C) was used to assess performance in skills in eating. Again, the ratings were analyzed as to whether the data indicated gains, losses, or no change in performance at the time of the final assessment. The results are analyzed in Table 17.

TABLE 17

Analysis of Changes in Ratings on
Eating Assessment Tool

	Increases	No Change	Decreases
Contrast	61 (20.27%)	179 (59.47%)	61 (20.27%)
Experimental	204 (25.06%)	455 (55.90%)	155 (19.04%)

(x^2=2.7893, d.f.=2, p .20)

While a greater proportion of the experimental sample (25.1%) evidenced increases than in the contrast group (20.2%), the difference was not of sufficient magnitude to attain significance.

Comparison of IEP Objectives. In another procedure to assess the impact of this project, the individual educational programs (IEP) for each child were obtained. Objectives in the areas of sensorimotor development and communication skills were identified on IEPs written during the first year of the project. Objectives in the corresponding areas were identified in IEPs written in the spring of the final year of the project. Each of the pair of objectives was randomly assigned first or second position and a questionnaire was developed.

This was administered to an expert jury of four professionals. All held advanced degrees in special education, had experience in teaching moderately, severely, and profoundly retarded students, and all were recognized leaders in the field in Minnesota. Each of these respondents was asked to judge each pair of objectives and indicate which the pair indicated the highest level of functioning. They were also asked to certify which of the pair of objectives was the most precise in terms of being measurable.

The results were scored by obtaining the percentage of responses which indicated the highest level of functioning or the most precise when compared with those which were written on the latest IEP. It was assumed that if the project were effective that this would be reflected in higher functional level objectives being written at the end of the project when

compared with those in the initial IEP. This would not hold true for the contrast group. The same rationale was used for determining precision of objectives.

The results are given in Table 18. Since there were very few objectives on preschool students, they were combined with the experimental group as well as being considered separately.

TABLE 18

Percentage of Objectives Rated Correctly for Level and Precision

	Level	Precision	Level	Precision
Contrast	79.17	45.83	50.00	33.29
Experimental	72.22	83.33	55.00	65.00
Preschool	50.00	80.00	75.00	50.00
Combined	64.29	82.14	56.82	63.64

With regard to functional level, there was little difference between the groups in either the sensorimotor area or communication skills. There is little evidence from these data to indicate progress in either sensorimotor or communication skills.

When precision is considered, however, a different pattern emerges. In both sensorimotor and communication areas, there are dramatic differences between the groups that participated early in the project activities and the contrast group. A much larger proportion of the objectives in those groups were perceived by the expert jury as being more measurable at the end of the project.

CONCLUSIONS

The data on the inservice training activities is highly positive. In all instances, this part of the project was effective. The activities were carried out in a timely manner, the target groups were all provided training, and the participants were extremely favorable in their ratings. Significant increases in scores on tests of knowledge were obtained in all groups.

Part of the resources of the project were allocated to the development of the communication sample. The results of this evaluation indicate that the effects were successful and that a reliable measure has been developed.

The results of the measurement of the impact of the project on student performance is equivocal. The data on communication skills indicate that significant gains were made in the preschool group, but the results of the analyses of covariance fail to support any differential effects across the experimental groups. However, the fact that only the

students in the preschool group consistently displayed gains is an argument for early intervention in the development of communication skills with this population.

The same phenomena occurred in the sensorimotor area, only in this case there was no identified preschool group. The experimental students made significant gains more often than the students in the contrast group, but the analysis of covariance procedure failed, except in one instance, to provide results which would support a conclusion of differential effects across the groups.

Supporting data for gains in the experimental group was not available from other measures (Bridgeview) in the sensorimotor area, nor did the data on feeding skills show positive results. In these latter cases it may be a matter of reliability. Both of these instruments are rating scales, and from the evaluator's observations of the data their reliability may be open to serious question. No reliability data are published in either case, but such information would be highly desirable.

The analysis of objectives from the IEPs failed to show any differential rate in the acquisition of skills in either the sensorimotor or communication domains. However, there was evidence of increased proficiency in the writing of measurable objectives as a result of project activities.

In summary, there appears to be evidence of student gains which could be attributed to project activities, but corroborating data from the more prcise method of analysis fails to support the conclusion that it could be attributed to the project. However, considering the data from the inservice activities, the gains in precision in writing objectives and the data on instrumentation, it may well be that the recurring problem of measuring gains in this population has not been resolved at this time. Only longitudinal data can confirm this hypothesis.

Table 1

Mean Ratings of Responses to Communication Inservice

Item	Teachers		Aides	
	Mean	S.D.	Mean	S.D.
1. The training helped me to understand the difference between the terms speech, language, and communication.	4.36	.23	4.43	.53
2. The training helped me understand the normal sequence of language and how it applies to severely and profoundly handicapped students.	4.28	.77	4.28	.52
3. The training helped me to understand the difference between formal and informal communication systems.	4.46	.54	4.67	.47
4. My ability to recognize the characteristics of a communication environment was improved by this training.	4.13	.63	4.23	.55
5. I feel that I am better able to identify the information that can be derived from a communication sample.	4.63	.51	4.23	.55
6. The training helped to identify situations which are conducive to spontaneous communication.	3.98	.70	4.24	.55
7. The training helped me to understand how situations and adult input can affect the student's communication responses.	4.37	.86	4.47	.53
8. The training improved my understanding of stages of cognitive development.	4.14	.57	4.16	.59
9. After the training, I am more capable of understanding the relationship of cognition to communication.	4.22	.58	4.24	.61
10. Overall, I believe this training effort substantially increased my skills and understanding of communication problems.	4.23	.57	4.41	.55

Table 2

Mean and Standard Deviation of Responses to Inservice on Sensorimotor Skills

Item	Teachers		Aides	
	Mean	S.D.	Mean	S.D.
1. The training helped me to understand the importance of sensory stimulation as it relates to development.	4.32	.59	4.31	.47
2. The training helped to understand the development of specific sensory systems.	4.02	.65	4.19	.51
3. The training helped to understand common sensory processing problems.	4.15	.55	4.15	.57
4. After the training, I better understand normal reflex development as it relates to the acquisition of gross motor skills.	3.94	.70	3.98	.68
5. I feel I am better able to recognize functional gross and fine motor deficits as a result of the inservice training.	3.90	.69	4.10	.48
6. The training helped me to become familiar with the ISSM sensorimotor assessment tools.	3.75	.70	3.64	.88
7. The training helped me understand and apply the principles of treatment.	3.33	.81	3.91	.45
8. After the training, I will be better able to participate effectively with team members in the program planning process.	3.96	.58	4.00	.53
9. The training helped me understand appropriate use of individual motor plans and therapy programs.	3.81	.64	3.94	.66
10. My ability to utilize observation skills for therapy referrals was improved by this training.	3.91	.62	4.03	.46
11. Overall, I believe this training effort substantially increased my skills and understanding of sensorimotor problems.	4.09	.80		

Table 3

Mean and Standard Deviations of Responses to Feeding Inservice

Item	Teachers		Aides	
	Mean	S.D.	Mean	S.D.
1. The training increased my understanding of the normal sequence of feeding development.	4.33	.68	4.36	.49
2. The training resulted in clarification of the relationship between the ISSM feeding assessment and the TIME assessment.	4.52	.51	4.50	.50
3. The training increased my understanding of the various areas to be assessed in feeding skills.	4.52	.51	4.27	.46
4. The training helped me to understand the importance and limitations of adaptive equipment.	4.41	.51	4.36	.57
5. Greater recognition of the importance of proper positioning was an important outcome of this training.	4.46	.71	4.60	.58
6. The training resulted in greater ability to demonstrate the appropriate use of facilitation techniques.	3.85	.66	4.04	.68
7. Overall, I believe this training effort substantially increased my skills and understanding of feeding problems.	4.41	.69	4.44	.56

Table 4

Results of Knowledge Test in Communication

	Pretest		Posttest				
	Mean	S.D.	Mean	S.D.	Diff.	t	p
Teachers	12.90	2.23	16.12	2.15	3.22	12.24	.0001
Aides	10.85	3.32	16.44	2.93	4.59	12.83	.0001

Table 5

Results of Knowledge Test in Sensorimotor Development

	Pretest		Posttest				
	Mean	S.D.	Mean	S.D.	Diff.	t	p
Teachers	12.52	5.23	18.45	5.97	4.94	12.24	.0001
Aides	13.22	3.14	19.01	3.20	5.79	15.49	.0001

Table 6

Results of Knowledge Test in Feeding

	Pretest		Posttest				
	Mean	S.D.	Mean	S.D.	Diff.	t	p
Teachers	12.19	10.48	14.81	12.43	2.61	6.96	.0001
Aides	5.98	8.65	8.65	12.27	2.66	5.20	.0001

Table 7

Mean Scores on Communication Sample

Variable	Experimental Group			Preschool Group			Contrast Group		
	Pretest	Posttest	Gain	Pretest	Posttest	Gain	Pretest	Posttest	Gain
Mean Length of Utterance (Words)	3.15	3.18	.03	1.63	2.12	.49*	2.42	2.84	.42*
Brown's Stages	3.00	3.10	.10	1.56	2.11	.55*	2.70	3.05	.35
Total Utterances	56.90	59.20	2.30	49.33	52.66	3.33	53.80	51.10	-2.70
Total Words	174.90	177.40	2.50	81.67	113.78	32.11 *	139.60	148.10	8.50

*Indicates the results of a t-test for significant of difference between the means was .05 or less.

Table 8

ANCOV Table for Mean Length of Utterance (Words)

Source	d.f.	S.S.	M.S.	F	p
Among groups	2	.93	.46	2.43	n.s.
Within groups	25	4.76	.19		
Total	27	5.69			

Table 9

ANOCOV Table for Brown's Stages

Source	d.f.	S.S.	M.S.	F	p
Among groups	2	.30	.15	.10	n.s.
Within groups	25	36.88	1.48		
Total	27	37.18			

Table 10

ANOCOV Table for Total Utterances

	d.f.	S.S.	M.S.	F	p
Among groups	2	264.57	132.29	1.13	n.s.
Within groups	25	2936.16	117.45		
Total	27	3200.74			

Table 11

ANOCOV Table for Total Words

	d.f.	S.S.	M.S.	F	p
Among groups	2	3820.03	1910.02	.71	n.s.
Within groups	25	67456.74	2698.27		
Total	27	71276.77			

Table 12

Analysis of Results for Contrast Group

	One Word	Two Word	Three Word	Four Word
Increase	4 (22.22%)	5 (27.78%)	4 (22.22%)	5 (27.78%)
Decrease	6 (22.27%)	5 (22.73%)	6 (27.27%)	5 (22.73%)

(x^2=.3939, d.f.=3, $p < .95$)

Table 13

Analysis of Results for Preschool Group

	One Word	Two Word	Three Word	Four Word
Increase	0	5 (33.33%)	6 (40.00%)	4 (26.67%)
Decrease	9 (42.86%)	4 (19.05%)	3 (14.29%)	5 (23.81%)

(x^2=9.4857, d.f.=3, $p < .01$)

Table 14

Analysis of Results for Experimental Group

	One Word	Two Word	Three Word	Four Word
Increase	4 (22.22%)	5 (27.78%)	3 (16.67%)	6 (33.33%)
Decrease	6 (27.27%)	5 (22.78%)	7 (31.82%)	4 (18.18%)

(x^2=2.0202, d.f.=3, $p < .50$)

Table 15

Means for Scores on Quantitative Profile on Movement Analysis

Variable	Experimental Group			Contrast Group		
	Pretest	Posttest	Gain	Pretest	Posttest	Gain
Assymetrical Tonic Neck Reflex	24.00	28.36	4.35	28.20	30.40	2.20
Symmetrical Tonic Neck Reflex	9.45	11.45	2.00*	10.67	12.33	1.67
Tonic Labrynthine (Prone)	29.55	35.45	5.90	40.60	41.27	.67
Body Righting and Trunk Flexibility	11.73	13.82	2.09*	12.33	13.33	1.00
Head Righting	20.45	23.45	3.00	26.27	27.67	1.40
Equilibrium and Protective Reactions	26.09	33.45	7.36	32.40	36.33	3.93
Visual Processing	39.00	50.73	11.73	44.67	48.33	3.67
Tactile Processing	23.45	30.09	6.64*	25.53	28.93	3.40
Bilateral Integration	47.91	73.64	25.73*	62.40	71.07	8.67*
Motor Planning	66.45	93.36	26.91*	79.60	86.60	7.00
Muscle Tone and Strength	57.27	69.18	11.91	62.60	72.33	9.73
Neurological Status	22.64	31.55	8.91*	31,13	36.33	5.20*
Developmental Level	63.10	75.91	12.81	66.47	72.13	5.67
Stability-Mobility	101.09	120.82	19.74*	115.93	127.40	11.47
Tonic Labrynthine (Supine)	20.09	23.73	3.64	24.20	26.53	2.33

*Indicates the results of a t-test for significance of diference between the means was .05 or less.

APPENDIX A

Inservice Objectives and Rating Scales

Interdependent Support Service Model
Communication In-Service Training

GENERAL OBJECTIVES:

Participants will:

1. Understand the differences between the terms speech, language, and communication.
2. Understand the normal sequence of language and how it applies to severely and profoundly handicapped students.
3. Understand the difference between formal and informal communication systems.
4. Recognize the characteristics of a communication environment.
5. Identify the information that can be derived from a communication sample.
6. Identify situations that are conducive to spontaneous communication.
7. Understand how situations and adult input affect the student's communication responses.
8. Recognize the stages of cognitive development.
9. Understand the relationship of cognition to communication.

SPECIFIC OBJECTIVES
At the end of the inservice training, participants will be able to:

1. Define communication.
2. Describe #287 Communication philosophy.
3. Define informal and formal communication systems and give 3 examples of each.
4. Identify the 4 categories of student responses and give an example of each.
5. Select a student and identify situations that are conducive to his/her communication.
6. Examine a communication sample and briefly describe the student's communication characteristics.
7. Demonstrate 2 techniques for increasing a student's spontaneous communication.
8. Identify the stages of cognitive development and explain how they relate to communication.

INSERVICE OBJECTIVES

General Objectives

Participants will:

1. Understand the importance of sensory stimulation as it relates to development.
2. Understand the development of specific sensory systems.
3. Understand common sensory processing problems.
4. Understand normal reflex development as it relates to the acquisition of gross motor skills.
5. Recognize functional gross and fine motor deficits.
6. Become familiar with ISSM sensorimotor assessment tools.
7. Understand and apply principles of treatment.
8. Be able to participate effectively with team members in program planning process.
9. Understand appropriate use of individual motor plans and therapy programs.
10. Utilize observation skills for therapy referrals.

Specific Objectives

1. Be able to identify type of sensory input being provided by self stimulatory behavior.
2. Identify important areas influenced by the vestibular system.
3. Explain the difference between primitive and discriminative tactile system.
4. Differentiate between excitatory and inhibitory vestibular stimulation and the appropriate activities that provide it.
5. Define motor planning.
6. Identify sensory systems involved in development of good body awareness.
7. Explain the important concept of mobility/stability as it relates to function in the classroom.
8. Explain the importance of trunk rotation for normal movement patterns.
9. Explain the relationship between sensory deficits and feeding problems.
10. Define postural insecurity.
11. Effectively implement an individual motor plan designed by physical/occupational therapist.
12. Differentiate between splinter skills and generalized skill acquisition.

RATING SCALE FOR PARTICIPANTS IN INSERVICE TRAINING ON COMMUNICATION SKILLS

Please indicate the degree to which you think this inservice training sequence was successful in achieving its objectives. Circle the number which best describes your evaluation of the training.

	Very Unsuccessful	Unsuccessful	Undecided	Successful	Very Successful
1. The training helped me to understand the difference between the terms, speech, language and communication.	1	2	3	4	5
2. The training helped me understand the normal sequence of language and how it applies to severely and profoundly handicapped students.	1	2	3	4	5
3. The training helped me to understand the difference between formal and informal communication systems.	1	2	3	4	5
4. My ability to recognize the characteristics of a communication environment was improved by this training.	1	2	3	4	5
5. I feel that I am better able to identify the information that can be derived from a communication sample.	1	2	3	4	5
6. The training helped me to identify situations which are conducive to spontaneous communication.	1	2	3	4	5
7. The training helped me to understand how situations and adult input can affect the student's communication responses.	1	2	3	4	5
8. The training improved my understanding of stages of cognitive development.	1	2	3	4	5
9. After the training, I am more capable of understanding the relationship of cognition to communication.	1	2	3	4	5
10. Overall, I believe this training effort substantially increased my skills and understanding of communication problems.	1	2	3	4	5

Comments:

RATING SCALE FOR PARTICIPANTS IN INSERVICE
TRAINING ON SENSORIMOTOR SKILLS

Please indicate the degree to which you think this inservice training sequence was successful in achieving its objectives. Circle the number which best describes your evaluation of the training.

	Very Unsuccessful	Unsuccessful	Undecided	Successful	Very Successful
1. The training helped me to understand the importance of sensory stimulation as it relates to development.	1	2	3	4	5
2. The training helped me understand the development of specific sensory systems.	1	2	3	4	5
3. The training helped me understand common sensory processing problems.	1	2	3	4	5
4. After the training I better understand normal reflex development as it relates to the acquisition of gross motor skills.	1	2	3	4	5
5. I feel I am better able to recognize functional gross and fine motor deficits as a result of the inservice training.	1	2	3	4	5
6. The training helped me become familiar with the ISSM sensorimotor assessment tools.	1	2	3	4	5
7. The training helped me understand and apply principles of treatment.	1	2	3	4	5
8. After the training, I will be better able to participate effectively with team members in the program planning process.	1	2	3	4	5
9. The training helped me understand appropriate use of individual motor plans and therapy programs.	1	2	3	4	5
10. My ability to utilize observation skills for therapy referrals was improved by this training.	1	2	3	4	5
11. Overall, I believe this training effort substantially increased my skills and understanding of sensorimotor problems.	1	2	3	4	5

Comments:

RATING SCALE FOR PARTICIPANTS IN INSERVICE TRAINING IN FEEDING SKILLS

Please indicate the degree to which you think this inservice training sequence was successful in achieving its objectives. Circle the number which best describes your evaluation of the training.

	Very Unsuccessful	Unsuccessful	Undecided	Successful	Very Successful
1. The training increased my understanding of the normal sequence of feeding development.	1	2	3	4	5
2. The training resulted in clarification of the relationship between the ISSM feeding assessment and the TIME assessment.	1	2	3	4	5
3. The training increased my understanding of the various areas to be assessed in feeding skills.	1	2	3	4	5
4. The training helped me to understand the importance and limitations of adaptive equipment.	1	2	3	4	5
5. Greater recognition of the importance of proper positioning was an important outcome of this training.	1	2	3	4	5
6. The training resulted in greater ability to demonstrate the appropriate use of facilitation techniques.	1	2	3	4	5
7. Overall, I believe this training effort substantially increased my skills and understanding of feeding problems.	1	2	3	4	5

Comments:

APPENDIX B

Knowledge Tests for Inservice

Interdependent Support Service Model
Pre/Post Test - Communication

1. T F Communication is defined as the process of transmitting and receiving information. This process is restricted to humans.

2. The following best defines language:

   a. it is a symbol system
   b. it is a sub-set of communication
   c. it is creative and rule governed
   d. a and b
   e. all of the above

3. T F All language is communication but not all communication is language.

4. T F The language of the severe/profound student develops in a normal pattern, but at a delayed rate.

5. T F In evaluating normal language, MLU is frequently correlated with the student's chronological age.

6. The term used to describe word meanings is:

   a. morphology
   b. semantics
   c. cognition
   d. expressive language

7. A student who taps his/her glass on the table to get more milk is demonstrating the semantic function

   a. disappearance
   b. cause-effect
   c. cessation
   d. recurrence

8. A young child entering the room points to a ball on the floor and says "buh'. She is trying to tell you

   a. I want the ball
   b. There's a ball on the floor
   c. both a and b
   d. neither a or b
   e. don't know

9. T F When looking at semantics, one only needs to consider the individual word meaning and not the function the word plays in an utterance.

10. Informal communication includes:

a. gestures
b. manual signing
c. Bliss symbolics
d. vocalizations
e. a and d
f. all of the above

11. T F A formal communication system may be made up of signs, written symbols, touch symbols, or spoken symbols.

12. Analysis of a communication sample can provide the following information:

a. the average length of student's utterances
b. the student's ability to initiate communication/topic
c. the student's turn taking abilities
d. situations or activities which are important to the student
e. a, b, and c
f. all of the above

13. The term MLU refers to

a. the meanings attached to words
b. the mode a student uses to communicate his/her wants, needs, or desires
c. the average length of a student's sentence
d. the smallest meaningful unit in a language

14. T F As a rule, snack time or lunch are the optimum communication environments for most students.

15. T F High interest activities and materials are sufficient to promote an optimum communication environment.

16. T F As a technique to promote problem solving, adults should direct student's behavior and verbalize the consequences of inappropriate actions.

17. T F Pragmatics is how the child uses his/her language to communicate intentions.

18. T F Cognition is defined as one's knowledge about the world.

19. T F A child's language grows and becomes more complex as his/her cognitive organization grows.

20. T F Using Piaget's stages of cognitive development, most severe/profound students are functioning in the concrete operations period.

PRE-POST TEST SENSORIMOTOR INSERVICE

1. When Prone (on stomach), an infant first holds head up well and in midline at: (a) 1 month, (b) 4 months, (c) 6 months, (d) 9 months, (e) 12 months.

2. A normal 5-month-old child held suspended in prone position (face down) will demonstrate a Landau. This behavior: (a) is a righting reaction, (b) helps ready the child for upright position, (c) demonstrates extensor tone, (d) all of the above, (e) none of the above.

3. The asymmetrical tonic neck reflex is usually integrated by: (a) 1 month, (b) 4 months, (c) 6 months, (d) 9 months, (e) 12 months.

4. It is important to understand that righting reactions: (a) serve to keep head upright in relation to gravity, (b) disappear at age 1, (c) predetermine handedness, (d) do not develop until 4 months, (e) none of the above.

5. Mobility sets the 4-month-old apart from the 12-month-old. Important factors in development of mobility are: (a) development of equilibrium responses, (b) development of extension, abduction, and rotation patterns, (c) persistance of asymmetrical tonic neck reflexes, (d) a and c, (e) a and b.

6. T F Cephalo-caudal development denotes increasing motor function in the direction of feet to head.

7. T F Righting reactions, protective extension, and equilibrium responses are all classified as automatic reactions.

8. T F The Moro reflex needs to be integrated before protective extension develops.

9. T F The first volitional steps are seen in the stepping reflex.

10. T F The newborn infant is predominantly extended.

11. T F In the 4-month-old, deliberate movements are predominantly confined to the upper extremities and head.

12. T F The positive supporting reflex is elicited when the baby's feet press against the supporting surface and the legs stiffen in response.

13. T F Astasia is the behavior seen when children walk on their toes.

14. T F Cruising is generally seen is a 4-month-old as they pull themselves around in a circle.

15. T F A "C" curce seen in the trunk in response to being pushed off balance demonstrates the presence of equilibrium responses.

16-20. Connect the appropriate term with the correct example of that term by drawing a line from one to the other. Complete all five items.

Term	Example
Flexion	Shoulders moving in opposition to hips.
Extension	A straightening of the back.
Abduction	A bending of arms.
Rotation	Moving in circles on stomach.
Pivot	Movement of arms or legs away from midline of body

21. If a child were engaging in the following behaviors, what type(s) of sensory stimulation might he/she be seeking? (Draw lines connecting R and L columns.)

a. Rocking	Visual
b. Bouncing/jumping	Auditory
c. Loud, monotone vocalization	Vestibular
d. Head waving	Tactile
e. Hand movement/hand watching	Proprioceptive
f. Hand to mouth behavior	

22. The vestibular system has connections to which of the following;

a. The muscles that control eye movement.
b. Areas of the brain that control muscle tone.
c. Areas of the brain that control certain automatic functions.
d. The area of the brain that helps focus attention through screening of incoming stimuli.
e. All of the above.
f. a and d only.

23. A tactually defensive child is operating on:

a. the primitive tactile system
b. the discriminative tactile system

24. Name 2 sensory modalities that need to be functioning for good body awareness.

1.

2.

25. Define motor planning.

Pre-post test Feeding problems

1. List 2 development chewing patterns.
   1.
   2.
2. Jaw control is a technique which can be used for several purposes. Name 3.
   1.
   2.
   3.
3. List 3 abnormal patterns or reflexes which can interfere with eating skills.
   1.
   2.
   3.
4. Give 3 reasons for not feeding a child with their heads tilted back.
   1.
   2.
   3.
5. Give 3 skills needed before a drooling program should be initiated.
   1.
   2.
   3.
6. List 5 pieces of adaptive feeding equipment and their purposes.
   1.
   2.
   3.
   4.
   5.
7. Give three possible reasons for increasing food textures.
   1.
   2.
   3.
8. Distinguish between tongue thrust and tongue protrusion. Give techniques for decreasing tongue thrust.
9. Name 2 techniques that can be used to facilitate increased lip closure.
10. Describe the correct position for self feeding.

APPENDIX C

Assessment Instruments

COMMUNICATION SAMPLE

Student's Name: _____ Situation 1 _____ # Minutes _____
Recorder: _____ Situation 2 _____
Date: _____ Situation 3 _____
Total # _____

ADULT/PEER COMMUNICATIONS	UTTERANCE #	STUDENT COMMUNICATIONS	CONTEXT/INTENT	SPONTANEOUS	CUED	QUESTION	IMITATION	# WORDS / # MORPHEMES	FLAGGER

Total number utterances _____ MLU in words _____
Total number words _____ MLU in morphemes _____
Total number morphemes _____ Other MLU _____

Total in sample

Graded Reflex Test
Adapted from the Bridge View Reflex Test by Barb Jirik

NAME:_____ EVALUATOR:_____

D.O.B._____ DATE:_____

Directions: Circle the number and/or underline specific performance to show the student's response to each test procedure. If a student is performing between two response levels, circle the lower response number and list the student's response under comments. If an item is to be tested on both sides of the body, circle R or L along with the number. If the student's performance differs from the response stated, note the response under comments under the item.

PROTOCOL SHEET

1. Positive Negative Supporting Reaction

Test Procedure: Student is supported under axilla and lowered feet first toward floor.

L R 1. Withdrawal response (lower extremity flexes when ball of foot touches floor).

L R 2. Total extension including plantar flexion.

L R 3. Unilateral extension (R/L) or partial weight bearing.

L R 4. Weight bearing on flat foot with appropriate line of gravity through hip, knee and ankle.

COMMENTS:

2. Asymmetrical Tonic Neck

Test Procedure: Student is supine, prop sitting, or on all fours. Active turning of head is elicited and held for five seconds. Head is returned to midline between trials.

L R 1. Obligatory response, can't break out of pattern

L R 2. Obligatory response but head and/or arms can move to break out of pattern.

L R 3. Slight movement in skull side arms noted less than 30 degrees.

L R 4. Skull arm flexes less than 30 degrees inconsistently.

L R 5. No movement in arms, change in muscle tone.

L R 6. No movement in arms, no change in muscle tone.

3. Symmetrical Tonic Neck

Test Procedure: Student on hands and knees, head is actively/passively flexed or extended and maintained for 5 seconds.

L R 1. Will not tolerate test position/unable to maintain position even with assistance.

L R 2. Bends elbows 90 degrees when neck is flexed.

L R 3. Bends elbow(s) from 10 to 90 degrees when neck is flexed.

L R 4. Bends elbows very slightly when neck is flexed.

L R 5. No movement noted in arms or legs, but change in muscle tone noted with neck flexion/extension.

L R 6. Maintains firm arm extension: no noticeable flexion with neck flexion/extension.

COMMENTS:

4. TLP

Test Procedure: Student prone on mat, active extension attempted. A piece of equipment may be used e.g., bolster, scooter board.

1. Will not tolerate test position.

2. Cannot achieve head extension.

3. Can achieve head and chest extension.

4. Achieves prone on elbows position.

5. Can shift weight so one arm is free for reaching.

6. Achieves head, arm and hip extension (but knees flex).

7. Achieves head, arm and full leg extension (momentarily).

8. Maintains head, arm and full leg extension for 5 seconds.

COMMENTS:

5. TLS

Test Procedure: Student supine on mat; child is actively or passively flexed.

L R 1. Will not tolerate test position; cannot passively flex the neck.

L R 2. Cannot actively flex hips or head.

L R 3. Flexes hips (90 degrees or more), but not head; or head, but not hips.

L R 4. Flexes hips, neck, etc., but struggles or attempts to use arms to obtain trunk flexion.

L R 5. Achieves a total flexion pattern momentarily.

L R 6. Maintains total flexion for 5 seconds.

COMMENTS:

6. Head Lag

Test Procedure: Student supine with knees bent, hands and/or wrists are grasped and student is pulled to sitting. Lower back down to supine.

1. Active head extension.

2. No active head extension or flexion.

3. Can hold head up once sitting position is reached.

4. Controls head except for first/last 15 degrees - 30 degrees.

5. Controls head through entire range if motion is done slowly.

6. Controls head throughout entire range regardless of need.

COMMENTS:

7. Body Righting

Test Procedure: Student is prone or supine on floor, active rolling is done. Attempted when rolling to the:

L R 1. Neck righting is present.

L R 2. Neck righting is absent, but student does not actively roll.

L R 3. Log rolls from prone to supine or supine to prone.

L R 4. Log rolls from prone to prone or supine to supine with no stops in movement.

L R 5. Segmental roll from prone to supine to prone.

L R 6. Segmental roll from prone to prone or supine to supine in smooth effortless manner.

COMMENTS:

8. Head Righting (Prone)

Test Procedure: Student's trunk is supported in prone (hands and feet should not touch floor).

1. No response - head remains flexed.

2. Head extends slightly, but not to neutral.

3. Head rights to neutral position.

4. Head rights slightly more than neutral, less than 45 degrees from neutral.

5. Head rights to slightly less than vertical, more than 45 degrees from neutral.

6. Head rights to vertical momentarily.

7. Head rights to vertical and maintains for 5 seconds.

COMMENTS:

9. Head Righting (Supine)

Test Procedure: Child's trunk is supported in supine (hands and feet should not touch floor).

1. No response - head remains extended

2. Head flexes slightly, but not to neutral.

3. Head flexes to neutral position.

4. Head rights slightly more than neutral (less than 45 degrees from neutral).

5. Head rights to slightly less than vertical (more than 45 degrees from neutral).

6. Head rights to vertical momentarily.

7. Head rights to vertical and maintains for 5 seconds.

COMMENTS:

10. Protective Extension forward

Test Procedure: Student is prone over beach ball or large bolster and is tipped forward.

L R 1. No response.

L R 2. Delayed or poor extension.

L R 3. Normal.

COMMENTS:

11. Protective Extension sideways

Test Procedure: Student is seated on mat and is pushed at shoulder to side.

L R 1. No response.

L R 2. Delayed or poor extension.

L R 3. Normal.

COMMENTS:

12. Protective Extension backward

Test Procedure: Student is seated on mat and is pushed at shoulders to back.

L R 1. No response.

L R 2. Delayed or poor extension.

L R 3. Normal.

COMMENTS:

13. Equilibrium, Prone

Test Procedure: Student is prone on tilt board or inflatable pillow and is tilted from side to side.

L R 1. No response to tilt.

L R 2. Slight response, head, trunk, upper and/or lower extremities.

L R 3. Good response, but not coordinated, slightly delayed, etc.

L R 4. Normal response - trunk, head, extremities.

COMMENTS:

14. Equilibrium, Supine

Test Procedure: Student is supine on a tilt board or inflatable pillow and is tilted from side to side.

L R 1. No response to tilt.

L R 2. Slight response; head, trunk, upper and/or lower extremities.

L R 3. Good response, but not coordinated, slightly delayed, etc.

L R 4. Normal response, trunk, head, extremities.

COMMENTS:

15. Equilibrium, Sitting (Side/Side)

Test Procedure: Student is sitting on a chair or on tilt board without hanging on.

L R 1. No response to tilt.

L R 2. Slight response; head, trunk, upper and/or lower extremities.

L R 3. Good response, but not coordinated, slightly delayed, etc.

L R 4. Normal response, trunk, head, extremities.

COMMENTS:

16. Equilibrium, Sitting (Front/Back)

Test Procedure: Place student in center of board, facing side of board, in sitting position most used by student, hands in lap. Slowly tilt student forward and backward about 30 degrees. Observe student.

L R 1. No response to tilt.

L R 2. Slight response; head, trunk, upper and/or lower extremities.

L R 3..Good response, but not coordinated, slightly delayed, etc.

L R 4. Normal response, trunk, head, extremities.

COMMENTS:

17. Equilibrium, 4-Point (Front/Back)

Test Procedure: Place student 4-point in center of board, facing side of board. Slowly tilt student forward and backward about 30 degrees. Observe student.

L R 1. No response to tilt.

L R 2. Slight response, head, trunk, upper and/or lower extremities.

L R 3. Good response, but not coordinated, slightly delayed, etc.

L R 4. Normal response, trunk, head, extremities.

COMMENTS:

18. Equilibrium, 4-Point (Side/Side)

Test Procedure: Place student 4-point in center of board, facing end of board. Slowly tilt to right and left about 30 degrees. Observe student.

L R 1. No response to tilt.

L R 2. Slight response; head, trunk, upper and/or lower extremities.

L R 3. Good response, but not coordinated, slightly delayed, etc.

L R 4. Normal response, trunk, head, extremities.

COMMENTS:

19. Equilibrium, Knee Stand (Side/Side)

Test Procedure: Place student knee standing in center of board facing end of board. Slowly tilt student to right and left about 30 degrees. Observe student.

L R 1. No response to tilt.

L R 2. Slight response; head, trunk, upper and/or lower extremities.

L R 3. Good response, but not coordinated, slightly delayed, etc.

L R 4. Normal response, trunk, head, extremities.

COMMENTS:

20. Equilibrium, Knee Stand (Front/Back)

Test Procedure: Place student knee standing in center of board facing end of board. Slowly tilt student forward and backward about 30 degrees. Observe student.

L R 1. No response to tilt.

L R 2. Slight response; head, trunk, upper and/or lower extremities.

L R 3. Good response, but not coordinated, slightly delayed, etc.

L R. 4. Normal response, trunk, head, extremities.

COMMENTS:

21. Equilibrium, Standing (Front/Back)

Test Procedure: Place student standing in center of board, facing side of board. Slowly tilt student forward and backward about 15-30 degrees. Observe student.

L R 1. No response to tilt.

L R 2. Slight response; head, trunk, upper and/or lower extremities.

L R 3. Good response, but not coordinated, slightly delayed, etc.

L R 4. Normal response, trunk, head, extremities.

COMMENTS:

22. Equilibrium, Standing (Side/Side)

Test Procedure: Place student standing in center of board, facing end of board. Slowly tilt student to right and left about 15-30 degrees. Observe student.

L R 1. No response to tilt.

L R 2. Slight response; head, trunk, upper and/or lower extremities.

L R 3. Good response, but not coordinated, slightly delayed, etc.

L R 4. Normal response, trunk, head, extremities.

COMMENTS:

EATING ASSESSMENT TOOL (E.A.T.)

Revised 4-77, Pilot Project
Paula Schmidt, OTR

Rating scale based on direct observation.
Bracket ( ) scores when adaptation or assistance used; score without assistance outside brackets.

1 = 0-10% seldom
2 = 10-50% occasionally
3 = 50-90% frequently
4 = 90-100% almost always
N.O. = not observed

Name
B.D.
Age
Diag.
Ther.

I. GROSS MOTOR SKILLS, POSTURE DURING FEEDING

1. Sits on standard chair of appropriate size
2. Symmetrical sitting posture
3. Upright trunk
4. Upright head
5. Stays in chair without slipping
6. Feet supported

Comment, description:

II. ORAL SKILLS

7. Absence of drooling when not eating
8. Mouth closed when not eating, talking
9. Brings head forward to food held in front of mouth
10. Opens jaw only as much as necessary
11. Keeps tongue in mouth when food inserted
12. Tolerates tactile stimulation outside mouth without indication of discomfort
13. Tolerates tactile stimulation inside mouth without indication of discomfort (note condition of gums and teeth).
14. Takes food into mouth from spoon
15. Cleans spoon with lips:
    a. upper lip
    b. both
16. Lips closed while chewing
17. Lips closed while swallowing
18. Food stays in mouth
19. Drinks from cup without tongue thrust
20. Can drink from straw
21. Liquid stays in mouth
22. Bites off food without increasing muscle tone other parts of body
23. Moves jaws up and down in chewing pattern
24. Chews without tongue thrust
25. Lateralizes tongue to keep food between teeth while chewing
26. Takes liquids without resistance
27. Swallows liquids without choking
28. Swallows solids without choking
29. Cleans food off lips with lips and tongue
30. Takes food from spoon without biting spoon

Comments, description:

III. EYE-HAND COORDINATION

31. Brings hand to mouth spontaneously
32. Able to suck on fingers
33. Picks up object from hard surface (provide four opportunities)
34. Maintains grasp of object
35. Volitional release of grasp (not throwing) based on four requests to put something on table surface
36. Brings objects to mouth (four opportunities)
37. Holds food while sucking, chewing on it (i.e., teething biscuit—stage before purposeful self-feeding)
38. Attempts to assist when being fed (reaches for food, spoon)
39. Self-feeds finger food
40. Places appropriate amount of food in mouth
41. Picks up spoon, holds in functional position
42. Brings spoon with food to mouth
43. Scoops food onto spoon
44. Complete self spoon feeding
45. Self-spoon feeding, neat
46. Holds bottle or cup while drinking
47. Independent cup drinking, seldom spills

Comments, description:

IV. FEEDING BEHAVIOR

48. Interest in eating
49. Cooperation in eating
50. Attends to task, not easily distracted
51. Consumes variety of food, most foods acceptable
52. Appropriate social behavior
53. Normal muscle tone with approach of food
    a. without distractors, other people
    b. with other people, some distractors

Comments, description:

V. OTHER (to be answered)

1. Evaluator perceives needs for intervention
2. Parents involved in changing child's feeding skills (or whomever child lives with)
3. Teacher involved in changing child's feeding skills
4. Regularly scheduled mealtimes
5. Weight recorded periodically. How often?
6. Height recorded periodically. How often?
7. Was behavior at this meal typical? If not, note discrepancies
8. Length of time to finish this meal
9. Describe food (pureed, ground, chopped, bite-size, whole)
10. Food allergies
11. Food dislikes (color, temperature, texture)
12. Medication or food supplements taken at mealtime
13. Foods difficult to eat
14. Usual mealtime procedure (i.e., liquids last or interspersed, how much independence expected; information that would be helpful to new feeding assistant)

Comments, description:

E.A.T. INSTRUCTIONS

The individual items on this assessment tool are worded in a positive way, so that a high score is the ultimate goal. A low score should be interpreted as a possible indicator of the necessity of providing remedial therapy, though the score of a very young child would have to be considered in view of appropriate expectations. If you are not sure how to score an item, consider whether you feel intervention is necessary for that item (e.g., item 10, jaw opening slightly more than necessary is not a problem worthy of intervention, but extreme variance from normal would be). Item 36, toy to mouth, would be scored N.O. if not observed and developmentally inappropriate.

Read over the items before the feeding session. Try to fill out the form during the feeding time or immediately after. Score the items as if you are seeing the client for the first time (comments may be inserted for your records). Bracket scores ( ) when adaptations or assistance is necessary so that subsequent evaluations would reflect changes in the level of independence, preferably including scores outside brackets, indicating function without adaptation or assistance. Describe necessary assistance and equipment as desired for client's record.

You will need the following items during the assessment:

1. A standard spoon
2. A plastic straw
3. A cookie or cracker if client is on a soft diet
4. A cup and liquid
5. A rubber toy to chew if developmentally appropriate. (Present before food.)

This evaluation tool is in the process of being analyzed for revisions. Comments and suggestions may be sent to Paula Schmidt, OTR, Child Development and Mental Retardation Center, University of Washington, WJ-10, Seattle, Washington, 98105.